

**UNIVERSITI TEKNOLOGI MARA**

**IMPLEMENTATION OF CAPTIVE PORTAL  
REDIRECTION FOR INVALID ISP SUBSCRIBERS**

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## **ABSTRACT**

ISPs have to focus on providing a consistent and high quality service to its customers. In Malaysia, the growth of internet users gives the impact to the ISP quality service. One of the factors contribute is high utilization resource on router termination point and RADIUS server. It is due to excessive failing AAA requests with invalid subscriber account credentials keep dialing to the router causing the router waste the utilization resources. This paper will discuss on captive portal redirection as a solution to stop users from keep dialing, reduce excessive failing AAA request and reduce the utilization resource.

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# CHAPTER 1

## INTRODUCTION

A captive portal is a Web page that the user of a public-access network is obliged to view and interact with before access is granted. Captive portals are typically used by business centers, airports, hotels, shopping plazas, restaurants, coffee shops, and other venues that offer free Wi-Fi hot spots for Internet users. When a user first log on to a network with a captive portal, a Web page is encountered that requires certain actions before Internet access is granted. For this project, Captive portal process has been modified to be used for invalid ISP subscribers that will be integrated with DSL services.

### 1.1 BACKGROUND AND PROBLEM STATEMENTS

Most ISP subscribers with modems configured with incorrect username or password and short retry interval tend to keep on trying for getting the subscriber account authenticated. PPP termination router requests the RADIUS server repeatedly sending the AAA authentication requests for the subscribers, which are getting rejected by RADIUS. These excessive failing AAA requests with invalid subscriber account credentials are causing router and RADIUS servers to waste CPU resources.

Analysis has been conducted on data from Telekom Malaysia subscribers and network 2013. From the data recorded by Telekom Malaysia, PPP termination router is experiencing high average utilization resource above 70%. To maintain good service level on router, average high Utilization resource should be below 70% and should not frequently hit maximum. This is also imperative for performing troubleshooting tasks that need the router to enable debugging. Turning on debug in scenarios where the Utilization